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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,403	02/09/2004	Junya Maruyama	12732-040002	6601

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EXAMINER

LIN, JAMES

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/773,403

Applicant(s)

MARUYAMA ET AL.

Examiner

Jimmy Lin

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 19-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/852,270.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/9/04.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims require “forming a second on the low molecular weight film”. It is indefinite as to what kind of film is actually being formed over the low molecular weight film. For the purpose of this examination, the limitation will be interpreted to be a second electrode formed on the low molecular weight film as suggested by Figs. 5-7.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 19-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the second, third, and fourth insulating layers. The specification only provides support for the first insulating layer to be an insulating layer (pg. 9, 2nd paragraph; pg. 11, 3rd full paragraph). The other layers are referred to as, for example, resin and protective layers (see Examples 4 and 5), but the specification never teaches that such layers are insulating.

There is no support for forming a polymer film over the second insulating film without forming over the third insulating film (claims 25,28). The specification only provides support for forming the polymer film over the third insulating film (Fig. 7C).

There is no support for forming a diamond-like carbon (DLC) or silicon film before forming the first electrode layer (claim 31). In fact, there is no support for forming a first and second insulating layer before forming the first electrode. The specification only teaches that the DLC or silicon nitride film can be formed over the resin film that covers an edge portion of the first electrode (pg. 12; Fig. 7B).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 19-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (U.S. Patent 6,274,887).

Yamazaki discloses a method of making an electroluminescent (EL) device, the method comprising:

forming a thin film transistor (TFT) 4023 over a substrate 4010;

forming a first insulating film 4026 over the TFT;

forming a first electrode 4027 over the first insulating film, wherein the first electrode is electrically connected to the TFT;

forming a second insulating film 4028 over the first insulating film and an edge portion of the first electrode;

forming an multilayer EL layer 4029 over the second insulating film;

forming a second electrode 4030 over the EL layer (col. 30, lines 19-39; Fig. 25B).

Yamazaki does not explicitly teach that the EL layer is formed by first depositing a polymer material followed by a low molecular weight material. However, Yamazaki teaches that the EL layer can be a multilayered structure, wherein materials can be either a polymer or a low molecular weight material (col. 30, lines 30-37). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have first deposited a polymer layer followed by a low molecular weight layer as the particular multilayered EL film of Yamazaki because Yamazaki teaches that both low types of materials are suitable for forming a multilayered EL film.

Yamazaki does not explicitly teach that a plasma treatment are performed on the first and second insulating films. However, Yamazaki does teach that silicon oxide is a suitable insulating layer (col. 29, lines 12-36) and that silicon oxide can be deposited via plasma CVD. The plasma CVD process would necessarily subject the insulating layers to plasma. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used silicon oxide as the particular material for the insulating layers and to have deposited the silicon oxide layers using plasma CVD with a reasonable expectation of success because Yamazaki teaches that such materials are suitable for insulating layers and that such deposition methods are suitable for silicon oxide material.

Claim 22: The silicon oxide layers are hardened when the layers are formed.

Claims 20,23: The EL layer can comprise of a light emitting layer and an electron injection layer. Such layers can be either a low molecular weight material or a polymer material (col. 30, lines 30-39).

Claims 21,24: The EL device can be used in a video camera (Fig. 13B).

Claim 25: Yamazaki teaches that a third insulating film of silicon nitride can be formed on the second electrode (i.e., on the second insulating film) in order to prevent the EL material from being degraded through oxidation (col. 33, lines 35-44; Fig. 26). (The Applicant should be noted that the broadest reasonable interpretation of “forming...on” does not require direct contact.)

Claim 31: The third and fourth insulating films of claim 31 will be interpreted to be the previously mentioned second insulating film (i.e., the silicon oxide film) and third insulating film (i.e., the silicon nitride film), respectively.

Yamazaki does not explicitly teach forming a first and second insulating film over the TFT and before forming the first electrode, wherein the second insulating film is either a DLC film or a silicon nitride film. However, Yamazaki does teach that a silicon nitride film 4141 can be formed onto the TFT and that an insulating layer 4142 can be formed onto the silicon nitride film. The silicon nitride film is a passivation layer. The insulating film is used as a planarizing layer to level out the layered parts of the TFT (col. 32, lines 15-28). Although Yamazaki teaches forming the silicon nitride film before forming the insulating film, one of ordinary skill in the art would recognize that forming the insulating film before the silicon nitride film would still allow the films to perform their desired functions and the device as a whole would still be operatively functional. The selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. See, for instance, *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) and MPEP 2144.04.II.C. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the insulating film before forming the silicon nitride film as opposed to forming the silicon nitride film before forming the insulating film with a reasonable expectation of success because such a configuration would still allow the films to perform their desired functions and because the Applicant has not provided any new or unexpected results for performing the order of steps as claimed.

Claims 26-30 and 32-33 are rejected for substantially the same reasons as discussed in claims 20-24 above.

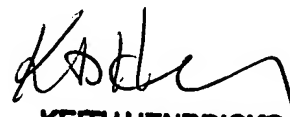
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KEITH HENDRICKS
PRIMARY EXAMINER